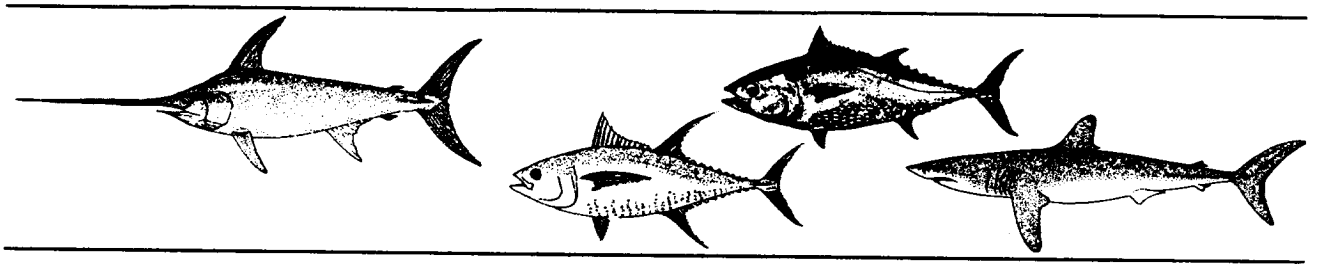
NOAA Technical Memorandum
NMFS-SEFSC-322

LARGE PELAGIC LOGBOOK NEWSLETTER - 1992[1]

by

Jean Cramer



U.S. DEPARTMENT OF COMMERCE
Ronald H. Brown, Secretary

National Oceanic and Atmospheric Administration
James N. Baker, Acting Under Secretary For Oceans and Atmosphere

National Marine Fisheries Service
Nancy A. Foster, Acting Assistant Administrator for Fisheries

April 1993

[1]Contribution MIA-92/93-59 from the Southeast Fisheries Center, Miami Laboratory, Oceanic Pelagics Division

NOTICE

This report should be cited as follows:

J. Cramer. 1993. Large Pelagic Logbook Newsletter - 1992. NOAA Technical Memorandum NMFS-SEFC- 322, 16 p.

Copies may be obtained by writing:

Dr. Jean Cramer
National Marine Fisheries Service
Southeast Fisheries Science Center
Miami Laboratory
75 Virginia Beach Drive
Miami, FL 33149

This is the third annual Large Pelagic Logbook Newsletter (previously titled Swordfish Logbook Newsletter). The primary purpose of this report is to summarize data and activities related to the mandatory large pelagics logbook and observer programs. This newsletter serves as a vehicle for dissemination of information to those directly involved in the fishery. In addition to updating catch, effort, CPUE, and location information, and detailing revisions to the 1993 daily logbook forms, this year's newsletter includes sections pertaining to swordfish regulations, mandatory dealer reporting, the longline observer program, preliminary monthly landings for 1992, and other related studies.

Regulations now in effect for swordfish have greatly increased the need for rapid monitoring logbook database. Since current year data are needed to monitor the fishery throughout the year, quality control steps are conducted as the data are received.

Comments and suggestions are invited; see section "WHO TO CONTACT FOR WHAT."

COMPARISON OF 1991 - 1992 LOGBOOK CATCH AND EFFORT DATA

Eight summary tables are included in this newsletter. The numbers of swordfish, tunas, and billfish reported caught, by area, for 1990, 1991 and 1992 (preliminary) are given for longline (Tables 1-3), gillnet (Tables 4-6) and pairtrawl boats (Tables 7-8). Longline effort is reported in hooks, gillnet and pairtrawl effort is reported in sets and numbers of boats. The longline boat statistics are from logbook reports that were considered to represent single pelagic longline sets; summary records and bottom longline records were excluded. Some changes in the tabulated data for earlier years and reported previously were due to additional revisions in the database. The gillnet and pairtrawl boat statistics represent all sets that reported fishing that gear type.

Locations of areas are shown in Figure 1. Definitions are as follows: area 1 - Caribbean (CAR), area 2 - Gulf of Mexico (GOM), area 3 - Florida East Coast (FEC), area 4 - South Atlantic Bight (SAB), area 5 - Mid Atlantic Bight (MAB), area 6 - Northeast Coastal (NEC), area 7 - Northeast Distant (NED), area 8 - North Equatorial (NOREQ), and area 9 - OTHER.

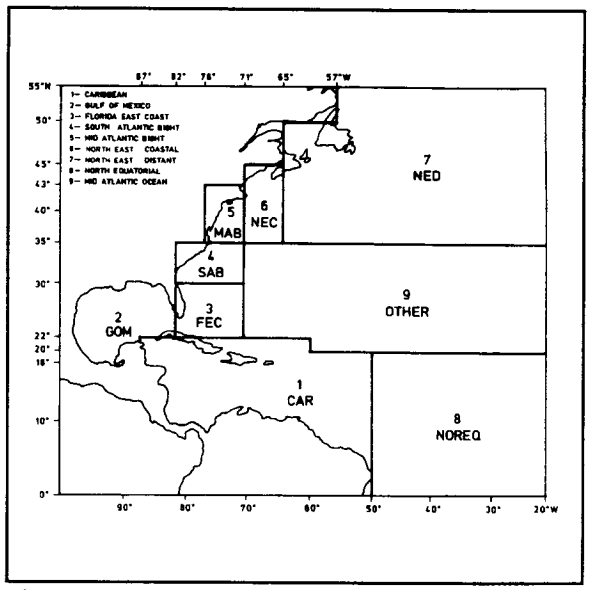


Figure 1. Map designating the nine areas used in analysis of the swordfish logbook data.

Between 1990 and 1991 reported effort decreased in the CAR, FEC, and NOREQ. Reported effort showed very little change between 1990 and 1991 in the SAB and NED. Increased effort was reported in the GOM, MAB, NEC, and OTHER.

Preliminary reported effort for 1992 was lower than reported for 1990 and 1991. The degree to which this represents an actual reduction in nominal effort can not yet be determined since not all of the 1992 reports have been received and incorporated into the 1992 data set at the time of this newsletter.

The reported yellowfin tuna catch for the three-year period was approximately 51,000, 67,000, and 60,000 fish, respectively. This represents a increase in numbers of reported yellowfin catch of 31% from 1990 to 1991.

In the GOM, the reported catch of yellowfin in numbers decreased annually from 1987 through 1990; this trend has reversed from 1990 to 1992. In the MAB, the reported yellowfin catch in numbers increased annually from 1987 through 1991. The reported decrease in 1992 may be due to late reporting.

In 1990 there were approximately 137,000 swordfish tabulated from single set longline records (caught = kept + discarded). There were approximately 110,000 swordfish in 1991; and 63,000 (preliminary) swordfish in 1992. The corresponding reported fishing effort for the three years was roughly 6.9, 7.1, and 5.2 million (preliminary) hooks, respectively (Tables 1-3). The 1992 reported catch and effort is likely to increase as additional data are incorporated into the data base. Reported swordfish catch decreased 25% from 1990 to 1991 with an increase in the number of reported hooks fished of 3%.

This decrease in reported annual swordfish catch by longline boats over the period 1990-1992, is found in all areas except OTHER.

The number of swordfish and yellowfin tuna reported caught by gillnet boats decreased from 1990 (9732 swordfish and 1301 yellowfin) to 1992 (1068 swordfish and 145 yellowfin) (Tables 4-6). This decreased reported catch occurred in both areas where gillnet gear is used - MAB and NED.

1991 was the first year during which pairtrawl gear was reported through the pelagic logbook reporting system. Use of pairtrawls for Atlantic large pelagic fishes expanded from 6 boats (3 pair) in 1991 to 11 boats (4 pair and one trio) in 1992 (Tables 7-8). Table 8 contains information from only eight of the eleven 1992 boats since set records from three of the boats for 1992 have not been received. Reported pairtrawl effort, much like the gillnet reported effort, occurred in areas 5 and 6. Reported catches by pairtrawl vessels of swordfish and yellowfin tuna were similar in 1991 (545 swordfish and 1962 yellowfin) and 1992 (405 swordfish and 1763 yellowfin) while reported catches of bigeye tuna and albacore increased from 1991 (124 bigeye and 869 albacore) to 1992 (1,192 bigeye and 8,281 albacore).

REPORTED FISHING LOCATIONS IN 1990, 1991, AND 1992

The location of reported fishing effort by year for 1990-1992 is shown in Figures 2-4. The general pattern for reported sets is similar across the three years.

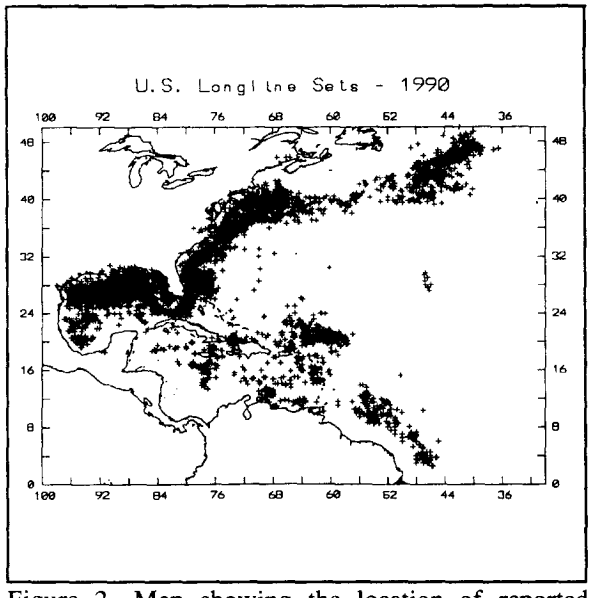


Figure 2. Map showing the location of reported fishing effort in 1990.

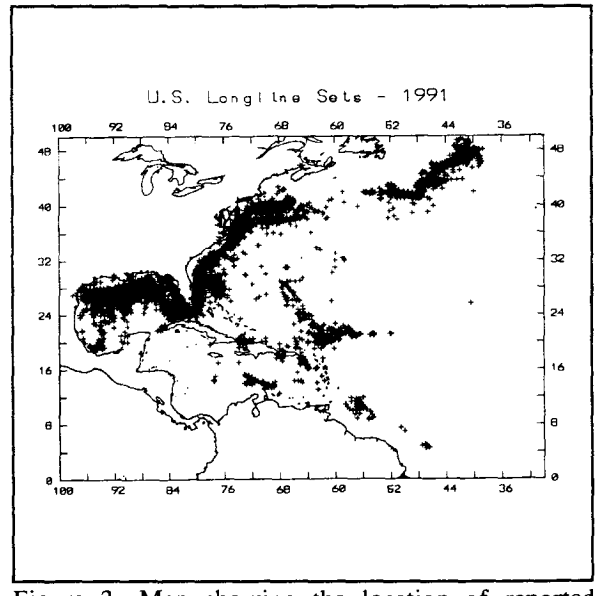


Figure 3. Map showing the location of reported fishing effort in 1991.

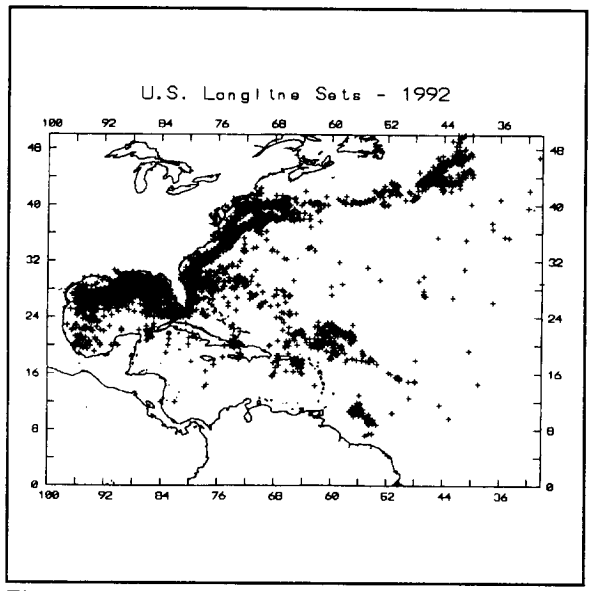


Figure 4. Map showing the location of reported fishing effort in 1992.

CPUE DATA

Table 13(a-c) represents 1990, 1991, and 1992 (preliminary) data, respectively, for swordfish and yellowfin tuna. These data are yearly totals, by areas as (defined in Figure 1) for: number of fish **KEPT**; number **DISC**arded; **K**ept+**D**iscarded; effort in **HOOKS**; the **N**umber of sets; and the average of the individual catch rates, **AV(C/E)** (equivalent to average CPUE). In 1992, numbers of fish discarded are reported in two categories: **DISC**carded **dead** and **DISC**carded **alive**. No attempt has been made in this summary to standardize the data for factors not related to fish abundance, but known to affect the CPUE values. These analyses are carried out for the purpose of stock assessments, and are reported elsewhere. Thus the data summarized here are considered to represent nominal CPUE.

The highest average reported nominal CPUEs for swordfish, on an annual basis, continued to be from the SAB fishery and the NED. The reported catch rates in 1990 for the SAB and the NED were, respectively, approximately 3.9 fish/100 hooks and 3.8 fish/100 hooks (Table 13a); in 1991 approximately 3.5 fish/100 hooks and 3.7 fish/100 hooks (Table 13b); and in 1992 (preliminary) approximately 3.6 fish/100 hooks and 7.4 fish/100 hooks (Table 13c).

Average reported CPUEs for yellowfin, on an annual basis, were consistently high from the GOM fishery, and the MAB. The reported catch rates in these areas in 1990 were approximately 1.0 fish/100 hooks in the GOM, and 1.4 fish/100 hooks in the MAB; in 1991 approximately 1.3 fish/100 hooks in the GOM and 2.0 fish/100 hooks in the MAB (Table 13b); and in 1992 approximately 3.4 fish/100 hooks in the GOM and 1.6 fish/100 hooks in the MAB (Table 13c). The highest CPUE reported for 1992 was 5.8 fish/100 hooks in OTHER. It is possible that this is correlated to the increased effort seen in OTHER. However the 1992 data is preliminary and must be more thoroughly edited before conclusions are drawn.

NUMBERS OF PERMITTED VESSELS

A compilation of activity related to the vessels permitted during the period 1987 through 1992 is presented below. "Active" refers to vessels that received permits, "Fished" implies a vessel submitted at least one positive fishing report during that year, "Caught Swordfish" means the vessel reported catching at least one swordfish during that year and "Caught Swordfish in 5 months" means the vessel reported catching at least one swordfish per month in at least five months of that year. Exclusions of logbook records were made when records were duplicate etc..., and the "Hooks Reported" includes all submitted logbooks whether or not they represented single pelagic longline sets, summary records, bottom longline records, or sets with less than 100 hooks. For this reason, these numbers are somewhat higher than the numbers in Tables 1- 3.

SWORDFISH REGULATIONS

At the 1990 ICCAT meeting, regulatory measures were recommended for the conservation of Atlantic swordfish stocks. The Report of the Standing Committee on Research and Statistics (SCRS) stated: "Taking into account that the SCRS has determined that the present yield of the swordfish stock cannot be maintained over the long term without decreasing

MANDATORY REPORTING IN THE ATLANTIC LARGE PELAGIC FISHERY

Reports of daily fishing activities and catches are required of permitted fishermen participating in this fishery and reports of landings purchased and prices paid by dealers are required under the regulations defined in the August 4, 1992 final ruling. For 1992 some additional reporting requirements have been instituted to allow for more timely tracking of landings and effort with respect to TAC and the various gear-specific subquotas.

Dealer Reporting. Mandatory dealer reporting of swordfish and other bycatch species became effective on September 30, 1990. These reporting requirements were modified and published in the Federal Register on August 4, 1992, to require bimonthly reports from dealers. Under these regulations, seafood dealers that handle swordfish and other large pelagic species are required to provide landings data (purchases) for these species twice a month. Reports are required even if the dealer handled no fish during the reporting period. Data on the amount of fish landed and the price per pound or total value are summarized by species and market category for each two week period. Dealers have the option of providing the information on a form available from the National Marine Fisheries Service or through copies of appropriate weigh-out sheets and/or sales receipts. Under these Federal reporting regulations, port agents contact dealers in the Northeast Region (Virginia and more northern states) and collect these landings and price data. In the Southeast Region, however, dealers are required to mail the bi-monthly summary reports directly to the Southeast Fisheries Science Center in Miami, Florida. These reports should be mailed to:

Science and Research Director
Southeast Fisheries Science Center
National Marine Fisheries Service
75 Virginia Beach Drive
Miami, Florida 33149

Attention: A. Bertolino

except for a dealer whose principal place of business is in an Atlantic coastal state from Maine through Virginia. The appropriate address for those dealers is:

Science and Research Director
Northeast Fisheries Center
National Marine Fisheries Service
166 Water Street
Woods Hole, MA 02543-1097

Attention: Dr. Steve Clark

During calendar year 1992, Federal permits were issued to 157 dealers. The permits allow these dealers to purchase large pelagic species and require them to comply with the Federal reporting requirements. Of this total, 77 dealers had their primary location in the Northeast Region and the remaining 80 dealers had their primary location in the Southeast Region. Because port agents collect these data in the Northeast Region, compliance with the reporting requirements has been good in this area. In the Southeast Region, where dealers are more widely dispersed, and port agents cannot contact each dealer, reporting compliance has been poor. Less than 1/3 of the permitted dealers in the southeast region submitted the required reports for the period January-October, 1992.

Because 1992 was the first year that dealers were required to submit bi-monthly reports, NMFS did not stringently enforce the reporting requirements and permits for 1993 were renewed upon request. However, NMFS will closely track dealer reporting performance in 1993 and future requests for dealer permits will be denied if the dealer has not complied with the Federal reporting regulations.

Submission of weigh-out sheets with logbook reports. In addition to dealer reporting, permitted fishermen in 1992 were required to submit their weigh-out sheets with their daily logbook forms within five days of the end of a trip. This modification to the regulations governing the fishery was made after numerous requests by fishermen and fishing industry representatives to require this form of reporting. Compliance with this regulation was generally poor, with weigh-out sheets submitted with less than 50% of the trips for which logbook reports were submitted. As was the case with dealer reporting, because 1992 was the first year that fishing permit holders were required to submit weigh-out sheets with their logbook reports, NMFS did not stringently enforce the reporting requirements and

NUMBERS OF PERMITTED VESSELS

YEAR	ACTIVE	FISHED	CAUGHT SWORDFISH	CAUGHT SWORDFISH IN 5 MONTHS	HOOKS REPORTED
1987	616	290	273	173	6,540,874
1988	684	390	339	197	7,015,808
1989	721	457	416	227	7,941,675
1990	610	419	363	195	7,500,450
1991	549	342	309	164	7,735,397
1992	515	334	284	172	6,565,889

present yield of the swordfish stock cannot be maintained over the long term without decreasing fishing mortality or the unlikely continued increase in recruitment over the next few years, and without decreasing fishing mortality over the next years, there is a significant probability of detrimental effects on future yield." Based on this scientific advice, the Commission made several recommendations, the first being that the Contracting Parties whose nationals have been actively fishing for swordfish in the North Atlantic take measures to reduce the fishing mortality of fish weighing more than 41 lbs dressed weight in the area north of five degrees North latitude by 15 percent from recent levels. Note, "recent" has been determined by ICCAT to mean 1988. The second recommendation was that in order to protect small swordfish, the Contracting Parties take the necessary measures to prohibit the taking and landing of swordfish in the entire Atlantic Ocean weighing less than 41 lbs dressed weight (25 kg whole weight, 49.2 inches lower jaw fork length).

Because of the time required to complete a final ruling on U.S. management measures for implementing the ICCAT recommendations, the Secretary of the U.S. Department of Commerce first issued an emergency ruling effective June 12, 1991 for the purpose of regulating the U.S. Atlantic swordfish fishery for the entire western North Atlantic Ocean, including the Gulf of Mexico and the Caribbean (north of 5°N. latitude). The emergency rule established a minimum size limit of 31 inches dressed carcass length or 41 pounds dressed weight with a 15 percent allowance for undersized swordfish based on the number of swordfish landed per fishing trip; set the 1991 annual quota for the U.S. directed swordfish fishery of 6.0 million pounds dressed weight, divided equally between the periods January 1 through June 30, 1991, and July 1 through December 31, 1991; allocated a sub-quota for each semi-annual period for the drift gillnet fishery; limited the possession of swordfish after a gear-type closure to a bycatch limit of 2 swordfish per trip except for vessels using or possessing harpoon gear for which no bycatch is allowed; set a 1991 bycatch allocation for swordfish at 0.9 million pounds dressed weight; prohibited the sale of swordfish caught in the recreational fishery and restricted the gear in this fishery to rod and reel; and provided for NMFS-approved observers on selected permitted vessels.

A final rule on management measures implemented in response to the ICCAT recommendations was published by the Secretary of Commerce on August 4, 1992. The final rule affirmed the measures taken by emergency action and established procedures for setting the annual Total Allowable Catch (TAC) and subquotas for various gears used in the fleet. This rule also established a total U.S. allowable catch (TAC) of 7.56 million pounds, dressed weight for 1992; subdivided the TAC into a 7.0 million pound directed-fishery quota and a 0.56 million pound bycatch quota; further subdivided the directed-fishery quota into semiannual (Jan.-June and July-Dec.) gear quotas as follows: (a) longline and harpoon - 3,452,417 pounds, dressed, (b) drift gillnet - 47,583 pounds, dressed; and established a bycatch limit of five swordfish per trip for vessels in the squid trawl fishery. Although the 1993 TAC has not been finalized at the time of this newsletter, it is likely that the total TAC will remain unchanged from the 1992 level, although some gear-specific subquotas could change from the 1992 levels.

permits for 1993 were renewed upon request. However, NMFS will closely track fishing permit reporting performance in 1993 and future requests for fishing permits will be denied if the permit holder has not complied with the Federal reporting regulations.

SWORDFISH LANDINGS

The Southeast Fisheries Science Center (SEFSC), Miami Laboratory, is responsible for compiling the landings of swordfish from mandatory reporting data. The total reported swordfish landings for 1991 by all gear types was 7.0 million pounds, dressed weight. The 1991 landings were 2.2% over the 1991 TAC. A total of 3 million pounds was reported landed from January 1 - June 30, 1991, and 4 million pounds for the period July 1 - December 31, 1991. For 1992, preliminary reported landings of swordfish were about 5.8 million pounds, dressed weight. This preliminary 1992 landings amount is 23% below the 1992 TAC of 7.56 million pounds. Of this preliminary total half (2.9 million pounds) was reported landed from January 1 - June 30, 1992. The monthly reported landings for 1990 -1992 (preliminary as reported by Feb. 1992) may be found in Table 9.

Monthly cumulative annual landings of swordfish are compared in Figure 5 for years 1989-1992 (preliminary as reported by Feb. 1992). Yearly U.S. swordfish landings declined from 1989 to 1992. At least part of the decline in 1991 and 1992 resulted from imposition of the 41 pound minimum size regulation. The degree to which this regulation has reduced the fishing mortality of undersized fish has yet to be determined. Monthly swordfish landings reported for 1992 (preliminary) are below 1991 levels. However, as noted above, the 1992 reported landings are likely lower than the actual catches and will probably be revised upward on the basis of late reports.

SWORDFISH < 41 LBS DRESSED WEIGHT - PERCENT LANDED

The percentage of fish landed less than dressed 41 lbs dressed weight has decreased since 1989 (Figure 6). From 1989 to 1991 the highest number of fish landed were in the 21-41 lb category. In 1991 this peak shifted to the 41-60 lb category.

FIG. 5. SWORDFISH LANDINGS
U.S. - ALL AREAS

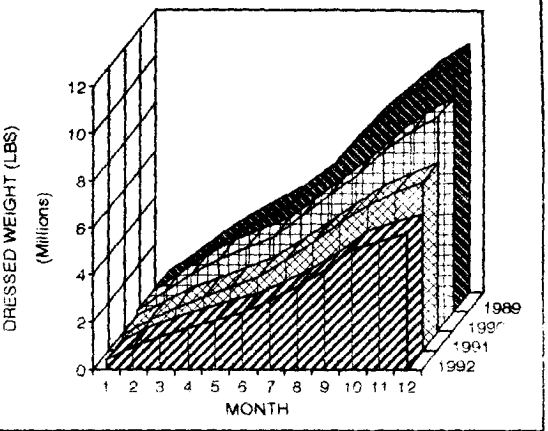
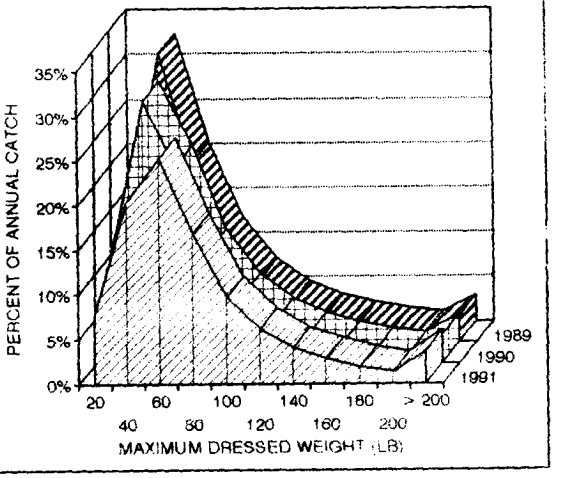


FIG. 6. US CATCH AT SIZE



SWORDFISH < 41 LBS DRESSED WEIGHT - NUMBER AND PERCENT LANDED BY MONTH BY AREA

The percentage of annual catch of fish less than 41 lbs dressed weight is reported by month and area for 1989, 1990, and 1991 (Figures 7a-7c).
The cumulative percent of fish less than 41 lbs dressed weight caught in all areas and all months fell from 46% in 1989 to 41% in 1990 and to 28% in 1991. The within area percentage catch of fish less than 41 lbs decreased by over 20% between 1989 and 1991 in the CAR, MAB, NEC and NED areas (Table 5). The percentage of undersized fish was above 15% in the SAB and MAB however these areas represent a small proportion of the annual U.S. catch (Table 6). The highest numbers of undersize fish were caught in the GOM and FEC (Figure 7a-7c & Tables 10, 11 & 12).

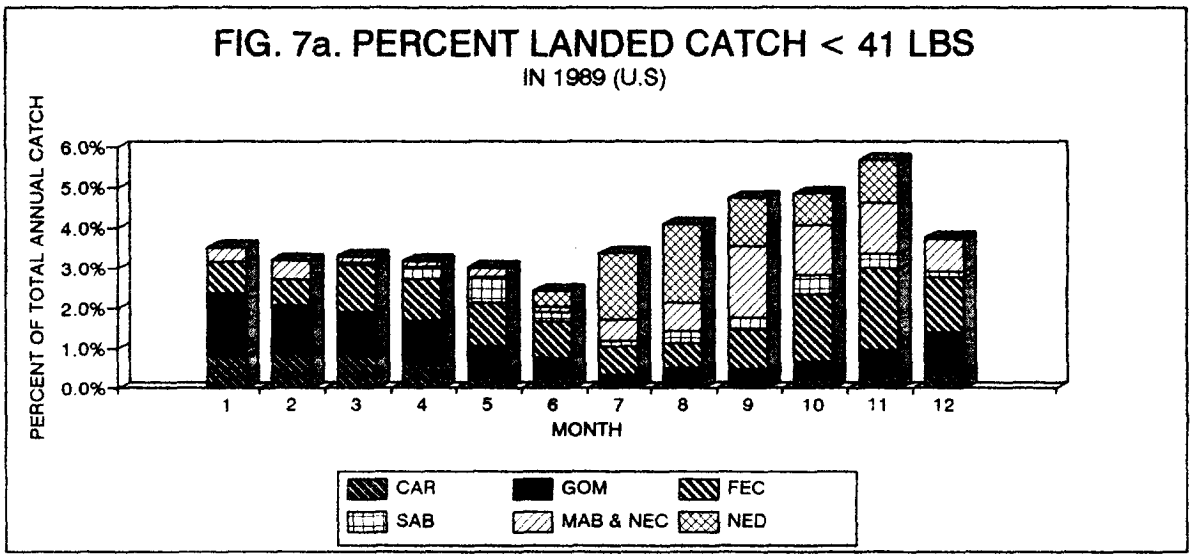


FIG. 7a. PERCENT LANDED CATCH < 41 LBS
IN 1989 (U.S)
PERCENT OF TOTAL ANNUAL CATCH
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
1 2 3 4 5 6 7 8 9 10 11 12
MONTH
CAR
GOM
FEC
SAB
MAB & NEC
NED

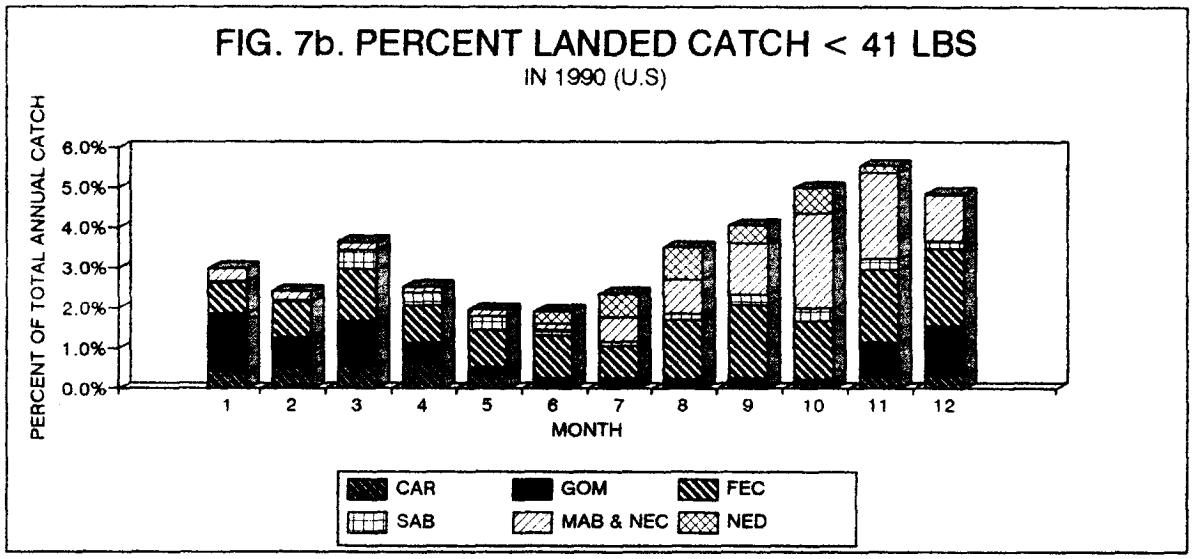


FIG. 7b. PERCENT LANDED CATCH < 41 LBS
IN 1990 (U.S)
PERCENT OF TOTAL ANNUAL CATCH
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
1 2 3 4 5 6 7 8 9 10 11 12
MONTH
CAR
GOM
FEC
SAB
MAB & NEC
NED

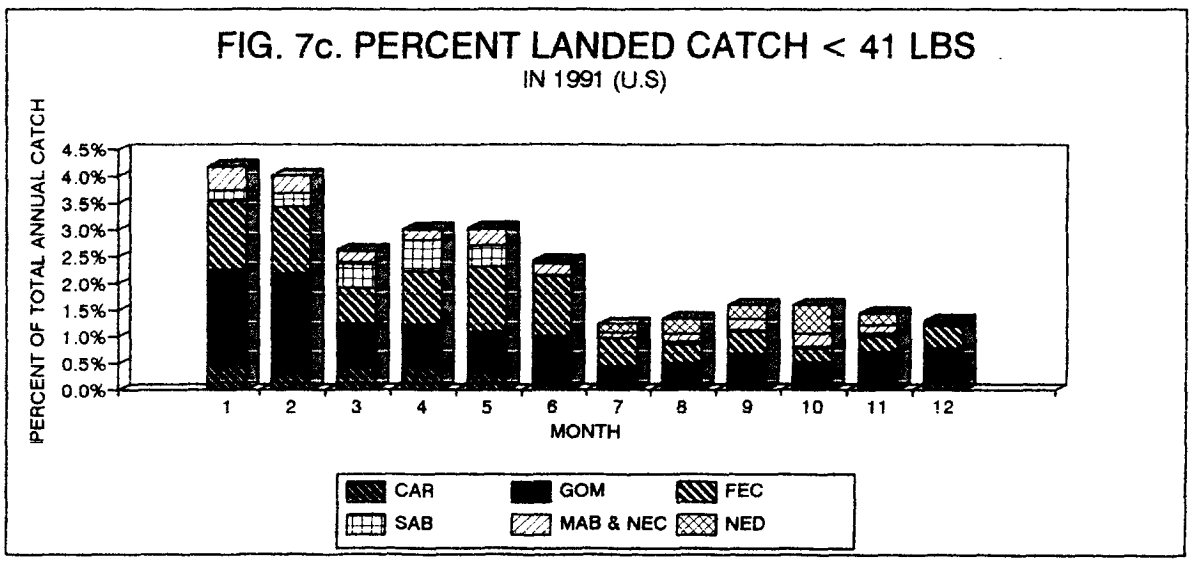
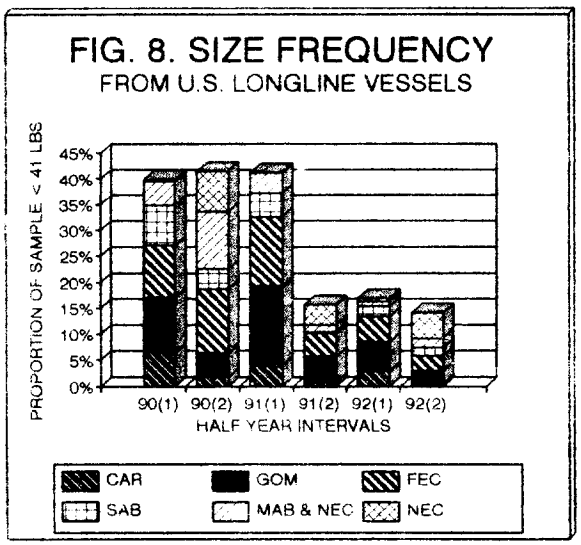


FIG. 7c. PERCENT LANDED CATCH < 41 LBS
IN 1991 (U.S)
PERCENT OF TOTAL ANNUAL CATCH
4.5%
4.0%
3.5%
3.0%
2.5%
2.0%
1.5%
1.0%
0.5%
0.0%
1 2 3 4 5 6 7 8 9 10 11 12
MONTH
CAR
GOM
FEC
SAB
MAB & NEC
NED

SWORDFISH SIZE FREQUENCY

The proportion of swordfish less than 41 lbs dressed weight reported in size frequency samples from U.S. longline vessels consistently decreased from the second half of 1990 to the first half of 1992 in all areas except the Northeast Distant (Figure 8).



NEW ANALYSES BASED ON SWORDFISH LOGBOOK DATA

Logbook data were used in a remote sensing study which explored the association between swordfish catch rates and thermal fronts on U.S. longline grounds in the western North Atlantic. Very high swordfish catch rates (fish per hook set) occurred more frequently in the vicinity of fronts than would be expected by chance. The vicinity of fronts was defined as "within 40 kilometers of a front." The 40-km band of influence allows for a margin of error in location reporting, as well as the fact that the frontal boundary is not vertical but, rather, changes with depth. To separate swordfish-directed sets from tuna-directed sets, the investigators included only the sets in which half or more of the fish caught were swordfish. The most striking aspect of the data was a regular fluctuation in fishing effort that corresponded to the phases of the moon, with maximum effort occurring during the two weeks around the full moon. The study covered the area from 32°N to 45°N and from 76°W to 63°W (roughly from Cape Hatteras north to Cape Breton), mainly the New England fishery. Results were based on data from 1987, the first full year in which logbooks were collected (Podesta et al 1993).

STOCK AND SPECIES IDENTIFICATION

Species identification and stock structure analysis of bluefin tuna and swordfish have been initiated through The Cooperative Institute for Fisheries Molecular Biology (FISHTEC) in South Carolina.

Over 1,000 swordfish gonads and samples of swordfish hearts and livers were collected through BWFA and by scientific observers. A portion of these tissues will be used be used in an ongoing study at the University of South Carolina on stock discreetness in swordfish. The others will be maintained in a "tissue library" for future projects on swordfish genetics.

A Canadian laboratory has developed methodology to differentiate between tuna species. Sites in the cytochrome b region of the mtDNA were identified which have sufficient between species variability. During a site visit at the Canadian Laboratory a SEFSC scientist sequenced portions of the cytochrome b region of the mtDNA of 5 tuna. Since cytochrome b is not thought to be variable enough for stock structure analyses, the initial goal of FISHTEC project will be to identify regions of mtDNA or genomic DNA with sufficient variability for use in stock structure analyses in bluefin tuna. Tissues form 9 bluefin tuna obtained from BWFA and other longline vessels will be used in this analysis. After informative regions of the DNA are identified, analysis of larval or "to young to migrate" fish will be made in order to identify breeding stocks.

PELAGIC LONGLINE OBSERVER PROGRAM

The Pelagic Longline Observer Program was initiated in 1992 through the Swordfish Management Plan. The purpose of this program is to confirm and augment fisheries information from mandatory pelagic logbooks. Vessels are selected at random to participate in this program.

Observer coverage of the U.S. large pelagic fleet is being implemented by NMFS (NEFSC Woods Hole, MA) and SEFSC (Miami). Selection notification letters, are mailed from the SEFSC to vessels owners/captains on the selection list. The letter specifies that the owner/captain would need to notify the Observer Program Coordinator in writing

of the vessel's fishing trips through the calendar quarter of interest, giving a least 5 business days notice prior to departure. In some cases, contact by telephone may be acceptable. The NEFSC utilizes verbal notification of selection. Once the observer is deployed to a vessel and the fishing trip completed, that vessel is relieved of observer coverage for the remainder of the quarter.

The observer is responsible for obtaining detailed information on the gear characteristics, and recording lengths of specific pelagic species during haulback. The observer also records interaction with marine mammals and sea turtles, including, but not limited to, sighting information and data collection for each marine mammal and sea turtle captured by the vessel during fishing operations. Specific tissue samples from various species are collected by the observer, if required. The observer also maintains an official field and photo diary of each trip. When the vessel docks, the observer monitors the unloading of the catch in order to obtain dressed weights from the landed catch. Because of their data collection duties, the observers can not participate as a deckhand during fishing operations, or stand vessel or crew watches.

Although the observer program is mandatory, the program relies on the cooperation of the vessel owners and captains to be successful. The responses from the owners and captains have been positive and in favor of observer coverage. In 1992, a total of 174 longline vessel sets were observed in waters south of 35° N by SEFSC observers . In waters north of 35° latitude 169 longline sets, 88 gillnet sets, and 48 pairtrawl tows were observed by NEFSC observers.

REVISIONS TO THE LOGBOOK FORMS FOR 1993

In the interest of improving our logbook data collection, several changes have been made to the daily logbook forms and accompanying instructions for 1993, both included in this newsletter as Figures 8 and 9. These changes include:

(1) envelopes are included with the forms so that logbook forms and tally sheets may be mailed together;
(2) additional species of bonito and oilfish have been added; and
(5) pair trawl gear has been added.

Again, as noted on the new logbook forms, **use of the current year forms will be necessary for compliance.** Further, **all old forms should be destroyed** upon receipt of the 1993 forms.

WHO TO CONTACT FOR WHAT

Any questions concerning the overall swordfish project at the Southeast Fisheries Science Center, NMFS, can be directed to Dr. Gerald Scott at (305) 361-4596. Questions concerning processing and analyzing the logbook data can be directed to Dr. Jean Cramer at (305) 361-4493. Information concerning permits can be directed to Ed Burgess at (813) 893-3722. Those needing 1993 logbooks can contact Herb Prytherch at (305) 361-4469. Questions about the observer program should be directed to Dennis Lee (305) 361-4247 or Cheryl Brown (305) 361-4275. If you have comments on this newsletter, or other comments, you can write them on your logbook reports or send them to Dr. Jean Cramer, SEFSC, NMFS, 75 Virginia Beach Drive, Miami, FL 33149.

REFERENCES

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Figure 8.

NOAA Form 88-191 (07/92) **MAIL THIS COPY TO NATIONAL MARINE FISHERIES SERVICE** OMB Number 0648-0016 Expiration Date 09/30/94

1993 PELAGIC LOGBOOK -- Daily Form

Captain's Signature:

Vessel Name:	Official Number:	Permit Number:

NO FISHING WAS DONE FOR ENTIRE MONTH OF _____ 1993

TARGET: __Swordfish __Yellowfin __Bigeye __Mixed Tuna __Sharks __Other (list)_____
GEAR: __Longline __Harpoon __Gillnet __Rod & Reel __Pair Trawl __Other (list)_____

SET DATE: _____/_____/1993	HAULBACK DATE: _____/_____/1993
Begin Set: _____ : _____ am pm	**End Set:** _____ : _____ am pm
Begin Haulback: _____ : _____ am pm	**End Haulback:** _____ : _____ am pm
Latitude at beginning: _____N	**Longitude at beginning:** _____W
OFF-LOADING DATE: _____/_____/1993	
Port/State:	
Surface Water Temp: _____.____F	**First Set of Trip?** _____Yes _____No
Dealer Permit #'s:	
Check Here If Tally Sheet Is Attached: _____	

LONGLINE:		**GILLNET:**	**PAIR TRAWL:**
No of Hooks: _____	Bottom Longlining? __Y __N	Mesh size (in): _____	**Fishing Circle Mesh Size(in):** ____
No Hooks between Floats: __	Use Line Thrower? __Y __N	Net Length (ft): _____	Ending Mesh Size(in): _____
No of Light Sticks: _____	Were You Tending/Rebaiting	Depth of Net (ft): _____	Cod End Mesh Size(in): ____
Mainline Length (nm): _____	hooks before haulback? Y N	Net Material: _____	Number of meshes at Fishing
Gangion Length (ft): _____	If Yes, how many times? ___	Number of Nets: _____	Circle (ft): _____
Floatline Length (ft): _____	Bait Used: __Live __Dead	**Depth Fished Below Surface (ft):** ____	

SWORDFISH AND TUNAS (Total Number):	Kept	Thrown Back: Alive	Thrown Back: Dead
SWORDFISH			
Bigeye Tuna			
Bluefin Tuna			
Yellowfin Tuna			
Albacore Tuna			
Blackfin Tuna			
Skipjack Tuna			
Bonito Tuna			
OTHER TUNA			
BILLFISH (Total Number):			
White Marlin			
Blue Marlin			
Sailfish			
Spearfish			
OTHER SPECIES (Total Number):			
Oilfish			
Dolphin (Mahi)			
Wahoo			
King Mackerel			
Greater Amberjack			
Banded Rudderfish			

SHARKS (Total Number):	Kept	Thrown Back: Alive	Thrown Back: Dead
Bignose			
Blacktip			
Blue			
Dusky			
Hammerhead, Great			
Hammerhead, Scalloped			
Hammerhead, Smooth			
Mako, Longfin			
Mako, Shortfin			
Night			
Oceanic Whitetip			
Porbeagle			
Silky			
Spinner			
Thresher, Bigeye			
Thresher, Common			
Tiger			
White			
OTHER SHARKS			

SEA TURTLES (Total Number):	Involved	Injured	Killed		Involved	Injured	Killed
Leatherback				Kemp's Ridley			
Loggerhead				Hawksbill			
Green				Unknown			

COMMENTS:

Figure 9.

IMPORTANT INSTRUCTIONS

Please print all information clearly.

DESTROY OLD FORMS. USE ONLY CURRENT YEAR FORMS.

→→→**Please use a separate log sheet for each set.**

Record the **Vessel Name, Official Number, Captain's Signature,** and **1993 Swordfish Permit Number**.

NOTE: If the vessel did not fish during a calendar month (for example: January 1-31), please mail original form with above information and state on the form (in box under **Swordfish Permit Number**) _ _ month _ _ year". Mail to NMFS on the last day of month.

Designate primary **Target** species.

Record **Gear Used.**

Record **Set Date** (calendar day when set began) and **Haulback Date.**

Enter Times when using longlines or gillnets for:

- **Begin Set** and **Begin Haulback** (designate AM or PM)
- **End Set** and **End Haulback** (designate AM or PM)

At the start of each set, record the location to the nearest degree of **LAT** (Latitude) and **LON** (Longitude), and the **Surface Water Temperature**, in degrees Fahrenheit.

Specify if this set was **First set of trip.**

For **Last Set of Trip** record: **Off-loading date, Port, Dealer(s) Swordfish Permit No(s)., and check if Tally Sheet is attached.**

Enter the following data for each set if using **Longline** gear:

- **Number of hooks set**
- **Number of hooks between floats**
- **Number of light sticks**
- **Length of Mainline** (in miles)
- **Length of Gangions** (in feet)
- **Length of Floatline** (in feet)
- **Were you bottom longlining** (for sharks, groupers, etc.)?
- **Did you use a line thrower?**
- **Were you tending or rebaiting hooks before haulback? If yes, specify how many times you did rebait hooks before haulback.**
- **Bait: indicate Live or Dead**

Enter the following data for each set if using **Gillnet**:

- **Mesh Size** (in inches)
- **Length of net** (in feet)
- **Depth of net** (in feet)
- **Net material**
- **Number of nets**
- **Depth fished below surface** (in feet)

Enter the following data for each set if using **Pair Trawl**

- **Fishing Circle Mesh Size** (in inches)
- **Ending Mesh Size** (in inches)
- **Cod End Mesh Size** (in inches)
- **Number of Meshes Around Fishing Circle** (do not include gores)

Record **NUMBERS OF SWORDFISH, TUNAS, SHARKS AND OTHER SPECIES KEPT AND THROWN BACK. Specify the number of fish that were thrown back Alive and the number thrown back Dead.**

Record **NUMBERS OF SEA TURTLES INVOLVED**

- **Total Number Involved.** Write down the total number of each sea turtle species that were caught in, or interacted with, your fishing gear for the period of your report.
- **Number Injured.** Write down the number of each sea turtle species that were injured while in, or by, your fishing gear.
- **Number Killed.** Write down the number of each sea turtle species that were killed while in, or by, your fishing gear.

Mail original logs to NMFS at the end of the fishing trip in pre-addressed envelopes.

Table 1. TOTAL NUMBER OF SWORDFISH, TUNA, AND BILLFISH REPORTED CAUGHT BY LONGLINE BOATS, BY AREA, AND EFFORT IN NUMBER OF HOOKS, FROM THE SWORDFISH MANDATORY LOGBOOKS, FOR 1990. NUMBERS CAUGHT REPRESENT KEPT PLUS DISCARDED. SEE FIGURE 1 FOR DESIGNATION OF AREAS. (SWD=SWORDFISH; YFT=YELLOWFIN; BET=BIGEYE; BFT=BLUEFIN; ALB=ALBACORE; WHM=WHITE MARLIN; BUM=BLUE MARLIN; SAI=SAILFISH.)

Area	SWD	YFT	BET	BFT	ALB	WHM	BUM	SAI	Effort
1-CAR	21,201	2694	1665	16	424	264	458	116	782,524
2-GOM	19,527	21,863	468	311	109	606	667	275	1,949,036
3-FEC	26,867	1,353	2,569	79	360	281	576	858	974,925
4-SAB	16,482	2,039	212	49	90	131	381	143	449,229
5-MAB	12,573	14,024	7,455	234	5,546	339	165	13	1,041,632
6-NEC	10,225	7,492	3,348	868	2,323	379	284	10	834,929
7-NED	27,820	884	1,410	99	168	59	52	0	735,363
8-NOREQ	950	438	323	0	49	22	21	53	50,740
9-OTHER	1,076	191	52	0	32	28	22	3	46,927
TOTALS	136,721	50,978	17,502	1,656	9,101	2,108	2,626	1,471	6,865,305

Table 2. TOTAL NUMBER OF SWORDFISH, TUNA, AND BILLFISH REPORTED CAUGHT BY LONGLINE BOATS, BY AREA, AND EFFORT IN NUMBER OF HOOKS, FROM THE SWORDFISH MANDATORY LOGBOOKS, FOR 1991. NUMBERS CAUGHT REPRESENT KEPT PLUS DISCARDED. SEE FIGURE 1 FOR DESIGNATION OF AREAS. (SWD=SWORDFISH; YFT=YELLOWFIN; BET=BIGEYE; BFT=BLUEFIN; ALB=ALBACORE; WHM=WHITE MARLIN; BUM=BLUE MARLIN; SAI=SAILFISH.)

Area	SWD	YFT	BET	BFT	ALB	WHM	BUM	SAI	Effort
1-CAR	12,272	999	567	13	198	176	364	64	473,371
2-GOM	14,618	26,546	556	493	96	743	540	476	2,233,814
3-FEC	25,163	1,056	1,867	28	360	313	736	906	841,717
4-SAB	13,067	1,714	123	8	112	137	184	124	436,103
5-MAB	8,405	22,897	7,536	514	6,356	426	110	12	1,228,367
6-NEC	7,901	13,390	4,967	755	2,504	389	113	1	1,003,353
7-NED	26,325	380	3,621	273	167	22	3	0	738,719
8-NOREQ	38	38	21	0	1	9	27	3	4,422
9-OTHER	2,214	82	156	6	124	81	31	5	118,156
TOTALS	110,003	67,102	19,414	2,090	9,918	2,296	2,108	1,591	7,078,022

Table 3. TOTAL NUMBER OF SWORDFISH, TUNA, AND BILLFISH REPORTED CAUGHT BY LONGLINE BOATS, BY AREA, AND EFFORT IN NUMBER OF HOOKS, FROM THE SWORDFISH MANDATORY LOGBOOKS, FOR 1992 (PRELIMINARY). NUMBERS CAUGHT REPRESENT KEPT PLUS DISCARDED (DEAD OR ALIVE). SEE FIGURE 1 FOR DESIGNATION OF AREAS. (SWD=SWORDFISH; YFT=YELLOWFIN; BET=BIGEYE; BFT=BLUEFIN; ALB=ALBACORE; WHM=WHITE MARLIN; BUM=BLUE MARLIN; SAI=SAILFISH.)

Area	SWD	YFT	BET	BFT	ALB	WHM	BUM	SAI	Effort
1-CAR	7,409	1,761	453	17	247	537	677	232	417,568
2-GOM	9,109	37,632	304	563	290	655	707	502	1,905,177
3-FEC	11,509	772	1,625	34	207	180	352	433	533,609
4-SAB	8,163	1,658	95	11	99	131	216	123	294,568
5-MAB	3,523	11,278	1,894	331	897	369	122	23	718,794
6-NEC	4,001	6,265	1,868	400	616	393	152	4	672,172
7-NED	18,426	651	2,059	70	157	219	20	2	582,655
8-NOREQ	104	117	52	1	4	4	12	0	6,357
9-OTHER	1,192	355	227	15	200	70	25	5	103,595
TOTALS	63,436	60,489	8,577	1,442	2,717	2,558	2,283	1,324	5,234,495

Table 4. TOTAL NUMBER OF SWORDFISH, TUNA, AND BILLFISH REPORTED CAUGHT BY GILLNET BOATS, BY AREA, AND EFFORT IN NUMBER OF SETS AND NUMBER OF BOATS, FROM THE SWORDFISH MANDATORY LOGBOOKS, FOR 1990. NUMBERS CAUGHT REPRESENT KEPT PLUS DISCARDED. SEE FIGURE 1 FOR DESIGNATION OF AREAS. (SWD=SWORDFISH; YFT=YELLOWFIN; BET=BIGEYE; BFT=BLUEFIN; ALB=ALBACORE; WHM=WHITE MARLIN; BUM=BLUE MARLIN; SAI=SAILFISH.)

Area	SWD	YFT	BET	BFT	ALB	WHM	BUM	SAI	SETS	BOATS
5-MAB	617	119	87	5	105				135	13
6-NEC	9114	1179	167	25	1670	4	4		836	22
7-NED	1	3			2				4	2
TOTALS	9734	1301	254	30	1777	4	4	0	975	24

Table 5. TOTAL NUMBER OF SWORDFISH, TUNA, AND BILLFISH REPORTED CAUGHT BY GILLNET BOATS, BY AREA, AND EFFORT IN NUMBER OF SETS AND NUMBER OF BOATS, FROM THE SWORDFISH MANDATORY LOGBOOKS, FOR 1991. NUMBERS CAUGHT REPRESENT KEPT PLUS DISCARDED. SEE FIGURE 1 FOR DESIGNATION OF AREAS. (SWD=SWORDFISH; YFT=YELLOWFIN; BET=BIGEYE; BFT=BLUEFIN; ALB=ALBACORE; WHM=WHITE MARLIN; BUM=BLUE MARLIN; SAI=SAILFISH.)

Area	SWD	YFT	BET	BFT	ALB	WHM	BUM	SAI	SETS	BOATS
3-FEC	8	4	2		2				2	2
4-SAB	6	1	1						1	1
5-MAB	429	6	5	6	46				56	5
6-NEC	1254	588	23	2	149		2		143	17
TOTALS	1697	599	31	8	197	0	2	0	206	23

Table 6. TOTAL NUMBER OF SWORDFISH, TUNA, AND BILLFISH REPORTED CAUGHT BY GILLNET BOATS, BY AREA, AND EFFORT IN NUMBER OF SETS AND NUMBER OF BOATS, FROM THE SWORDFISH MANDATORY LOGBOOKS, FOR 1992 (PRELIMINARY). NUMBERS CAUGHT REPRESENT KEPT PLUS DISCARDED (DEAD OR ALIVE). SEE FIGURE 1 FOR DESIGNATION OF AREAS. (SWD=SWORDFISH; YFT=YELLOWFIN; BET=BIGEYE; BFT=BLUEFIN; ALB=ALBACORE; WHM=WHITE MARLIN; BUM=BLUE MARLIN; SAI=SAILFISH.)

Area	SWD	YFT	BET	BFT	ALB	WHM	BUM	SAI	SETS	BOATS
5-MAB	204	17	1		12				63	3
6-NEC	826	113	12	22	11	1		6	99	14
9-OTHER	25								2	1
TOTALS	1055	130	13	22	23	1	0	6	164	17

Table 7. TOTAL NUMBER OF SWORDFISH, TUNA, AND BILLFISH CAUGHT BY PAIR TRAWLS, BY AREA, AND EFFORT IN NUMBER OF SETS AND NUMBER OF BOATS, FROM THE SWORDFISH MANDATORY LOGBOOKS, FOR 1991. NUMBERS CAUGHT REPRESENT KEPT PLUS DISCARDED. SEE FIGURE 1 FOR DESIGNATION OF AREAS. (SWD=SWORDFISH; YFT=YELLOWFIN; BET=BIGEYE; BFT=BLUEFIN; ALB=ALBACORE; WHM=WHITE MARLIN; BUM=BLUE MARLIN; SAI=SAILFISH.)

Area	SWD	YFT	BET	BFT	ALB	WHM	BUM	SAI	SETS	BOATS
5-MAB	9	67	6		175				18	4
6-NEC	536	1895	118		694				116	6
TOTALS	545	1962	124		869				134	6

Table 8. TOTAL NUMBER OF SWORDFISH, TUNA, AND BILLFISH CAUGHT BY PAIR TRAWLS, BY AREA, AND EFFORT IN NUMBER OF SETS AND NUMBER OF BOATS, FROM THE SWORDFISH MANDATORY LOGBOOKS, FOR 1992 (PRELIMINARY). NUMBERS CAUGHT REPRESENT KEPT PLUS DISCARDED (DEAD OR ALIVE). SEE FIGURE 1 FOR DESIGNATION OF AREAS. (SWD=SWORDFISH; YFT=YELLOWFIN; BET=BIGEYE; BFT=BLUEFIN; ALB=ALBACORE; WHM=WHITE MARLIN; BUM=BLUE MARLIN; SAI=SAILFISH.)

Area	SWD	YFT	BET	BFT	ALB	WHM	BUM	SAI	SETS	BOATS
5-MAB	380	1542	1140	1	8193				369	9
6-NEC	25	221	52		88			0	36	6
TOTALS	405	1763	1192	1	8281	0	0	0	~~164~~ 405	9

Table 9. MONTHLY SWORDFISH LANDINGS IN LBS DRESSED WEIGHT FROM 1990 TO 1992.

	MONTH					
YEAR	1	2	3	4	5	6
1990	839,178	794,926	760,177	631,254	493,183	449,220
1991	613,177	619,188	464,422	465,789	416,747	432,630
1992	417,193	551,260	424,938	357,820	335,591	312,405

	7	8	9	10	11	12
1990	895,303	888,258	851,158	1,053,476	806,843	644,159
1991	709,718	773,515	816,558	766,909	527,175	446,311
1992	505,673	596,388	699,394	870,381	365,150	323,962

Table 10. PERCENTAGE OF ANNUAL U.S. SWORDFISH LANDED CATCH BY AREAS (TOTAL ANNUAL CATCH OF SWORDFISH IN AREA/ TOTAL ANNUAL CATCH OF SWORDFISH IN ALL AREAS).

	AREA							
YEAR	CAR	GOM	FEC	SAB	MAB	NEC	NED	SUM
1989	13%	18%	24%	5%	8%	9%	23%	100%
1990	15%	12%	30%	5%	14%	11%	14%	100%
1991	16%	21%	23%	4%	9%	7%	21%	100%

Table 11. PERCENTAGE OF ANNUAL US SWORDFISH LANDED CATCH < 41 LBS BY AREAS (ANNUAL OF CATCH OF SWORDFISH < 41 LBS IN AREA / TOTAL ANNUAL CATCH OF SWORDFISH IN ALL AREAS).

	AREA							
YEAR	CAR	GOM	FEC	SAB	MAB	NEC	NED	SUM
1989	5%	9%	13%	3%	5%	3%	7%	46%
1990	3%	7%	15%	3%	7%	3%	3%	41%
1991	2%	10%	9%	2%	2%	1%	2%	28%

Table 12. PERCENTAGE OF SWORDFISH LANDED CATCH < 41 LBS WITHIN AREAS (ANNUAL CATCH OF SWORDFISH < 41 LBS IN AREA / ANNUAL CATCH OF SWORDFISH IN AREA).

	AREA						
YEAR	CAR	GOM	FEC	SAB	MAB	NEC	NED
1989	36%	53%	55%	66%	61%	33%	32%
1990	23%	60%	52%	60%	50%	24%	22%
1991	15%	51%	39%	53%	22%	10%	8%

Table 13. YEARLY TABULATIONS FOR SWORDFISH AND YELLOWFIN TUNA FOR (a) 1990, (b) 1991 AND (c) 1992 (PRELIMINARY). THE AREAS ARE DEFINED IN FIGURE 1. INFORMATION INCLUDES NUMBER OF FISH KEPT; NUMBER OF FISH DISCARDED; KEPT PLUS DISCARDED; EFFORT IN HOOKS; NUMBER OF SETS; AND AVERAGE OF THE INDIVIDUAL CATCH RATES, EQUIVALENT TO CPUE [AVG(C/E)], IN # OF FISH/100 HOOKS.

a.

	SWORDFISH TOTALS FOR 1990						YELLOWFIN TOTALS FOR 1990			
AREA	HOOKS	N	K+D	%KEPT	%DISC	AVG(C/E)	K+D	%KEPT	%DISC	AVG(C/E)
1	782524	1934	21201	95	5	2.811	2694	97	3	0.340
2	1949036	4050	19527	91	9	1.593	21863	97	3	0.978
3	974925	3533	26867	94	6	2.855	1353	95	5	0.126
4	449229	1481	16482	95	5	3.928	2039	98	2	0.373
5	1041632	2336	12573	92	8	1.267	14024	91	9	1.410
6	834929	1715	10225	93	7	1.273	7492	98	2	0.907
7	735363	1285	27820	96	4	3.755	884	98	2	0.139
8	50740	95	950	96	4	1.955	438	100	0	0.975
9	46927	92	1076	97	3	2.713	191	98	2	0.081
TOTAL	6865305	16521	136721	94	6	2.312	50978	96	4	0.651

b.

	SWORDFISH TOTALS FOR 1991						YELLOWFIN TOTALS FOR 1991			
AREA	HOOKS	N	K+D	%KEPT	%DISC	AVG(C/E)	K+D	%KEPT	%DISC	AVG(C/E)
1	473371	1161	12272	92	8	2.772	999	95	5	0.188
2	2233814	3884	14618	82	18	1.159	26546	98	2	1.265
3	841717	3066	25163	72	28	3.115	1056	95	5	0.118
4	436103	1225	13067	68	32	3.515	1714	90	10	0.315
5	1228367	2438	8405	61	39	0.723	22897	88	12	2.005
6	1003353	1811	7901	67	33	0.801	13390	97	3	1.393
7	738719	1166	26325	86	14	3.657	380	90	10	0.055
8	4422	7	38	95	5	0.939	38	89	11	0.839
9	118156	223	2214	96	4	2.038	82	94	6	0.066
TOTAL	7078022	14981	110003	78	22	1.970	67102	94	6	0.893

c.

	SWORDFISH TOTALS FOR 1992							YELLOWFIN TOTALS FOR 1992				
AREA	HOOKS	N	K&D	%KEPT	%DISC (dead)	%DISC (alive)	AVG(C/E)	K+D	%KEPT	%DISC (dead)	%DISC (alive)	AVG(C/E)
1	417568	851	7409	82	9	9	2.037	1761	95	1	4	0.341
2	1905177	3067	9109	53	28	19	0.900	37632	90	3	8	3.409
3	533609	1846	11509	62	25	14	2.398	772	98	0	2	0.123
4	294568	827	8163	59	31	10	3.609	1658	95	2	3	0.476
5	718794	1318	3523	60	19	20	0.509	11278	94	2	4	1.643
6	672172	1053	4001	71	14	15	0.690	6265	97	1	2	0.972
7	582655	877	18426	81	9	10	7.382	651	95	1	4	0.171
8	6357	11	104	96	1	3	1.661	117	78	0	22	1.400
9	103595	182	1192	94	3	3	1.172	355	98	1	1	5.771
TOTAL	5234495	10032	63436	69	18	13	1.993	60489	92	2	6	1.571